



PATENT APPLICATION

Serial Number: 10/730605

Filed: 8 December, 2003

Applicant: Robert W. Love

Title: Inversely Proportioned Mouthpieces

Examiner/GUA:

Mailed February 2, 2004
at Englewood, Ohio

Information Disclosure Statement

Commissioner for Patents
Arlington, VA 22313-1450

Sir or Madam:

Attached is a completed Form PTO/SB/08(A&B) and copies of the pertinent parts of the reference cited therein. Reference items are listed by citation numbers 1 to 24.

Some historical variations of brass wind mouthpieces are presented here. **All prior-art mouthpieces discussed below are produced from fixed-length blanks and they are acoustically balanced using the ancient principle of direct proportions.** Many older designs are unsuitable for modern instruments and they have been abandoned.

HISTORICAL ANTECEDENTS

8. Lyons and Healy catalog of year 1883 shows a short length for an "English" cornet mouthpiece and a long length for a "French" cornet mouthpiece. Wright and Allen mouthpieces have variations in the taper that connect to an instrument. These two lengths, apparently shown near actual size, are similar in length to modern "short shank" and "long-shank", however internal differences most likely make these historic mouthpieces unsuitable for modern equipment.
9. Sears & Roebuck catalog of year 1897 demonstrates the lack of reliable standards by stating "send an impression of the tube where mouthpiece is to enter, and attach same to order". Higham, Austin, and Hutchins models are offered, but actual differences of shape and size are unknown by the current Applicant.
10. C.G. Conn's "New Invention Mouthpieces" of year 1908 are shown full size and appear to follow the short English standard. Trumpet mouthpieces shown are much shorter than modern mouthpieces and they were abandoned by year 1940 or earlier. Proportions shown for trumpets would not work well with modern equipment.
11. J. W. Jenkins' Sons Music Co. of year 1910 shows "York and Sons" brand cornet mouthpieces using the same lengths as the "English" length of C. G. Conn above.
12. Jenkins of year 1903, Czsechoslovak Music of 1932, and Continental Music of 1932 show Vincent Bach cornet mouthpieces with the modern length standard that descends from the earlier French styles. Trumpets and their related mouthpieces continue to evolve and change as shown by Bach mouthpieces that are 0.5 cm

shorter than modern standards and about 0.7 cm longer than Conn trumpet mouthpieces of 1908. These Bach trumpet mouthpieces were abandoned by about 1940 in favor of length standards seen in 1956. They do not work well with modern instruments.

13. H. N. White of year 1936 appears to show four instrument mouthpieces that use the Vincent Bach standards still being followed today. Perhaps new length standards account for the description as "New King Modern Type Mouthpieces" and doubled prices over older mouthpieces listed above on the same page. King was a brand name for the W.N. White Company.
14. **Vincent Bach Embouchure and Mouthpiece Manual of year 1956 shows sizes now considered standard throughout the world.** These standards are so universal that length is not mentioned in most sales catalogues. See Item 20 below.
15. Prior to the current invention, the applicant unsuccessfully explored the use of different mouthpiece lengths for use with a trumpet. Crude prototypes had incorrect lengths, inconsistent internal volume of air, and backbore shapes more similar to conventional variations. The prototypes were privately disclosed to mouthpiece designers at Marcinkiewicz Music Products in 1987 and in 1988 for the Leblanc Corporation to generate support for research and development. Neither company was interested in researching or developing the concepts into sellable products.
16. **A catalog "Yamaha Mouthpieces for Brass Instruments" circa 1998 gives a good introduction to conventional mouthpieces.** Yamaha products include most variations found in product lines from other prominent manufacturers. Yamaha shows listings for short-shank and long-shank cornet mouthpieces on page 9. No other instrument has such different lengths, however different size trombones have different size shanks (or end tapers) that are not interchangeable with each other. Page 4 shows a drawing of shallow versus deep cup-sizes for Yamaha models.
17. Prior to 1980, famous mouthpiece designer Dennis Wick of England adapted and modernized some mouthpieces from the 19th century and introduced variations of some Vincent Bach-style mouthpieces. Wick's designs all follow the principle of direct proportions. Thus his mouthpieces require a change of tuning slide position just like other conventional mouthpieces like the Vincent Bach mouthpieces. Dennis Wick sales literature details the conventional tradeoffs between amongst cup size, center-bore, and back bore size. See chart for cornet mouthpieces from year 2001.
18. Page 32 of the "Vincent Bach Mouthpiece Manual" from 2003 shows length standards that are identical to the 1956 standards. Newer mega-tone models use the same lengths as older models. No other manufacturer publishes such length standards in their catalogues, most likely because of potential embarrassment.

For lower pitched instruments in the brass wind family, mouthpiece lengths and variations approximate those of Vincent Bach's 1956 standards. Like cornet and trumpet mouthpieces, they lack the ability to be interchanged without adjustments an instruments' tuning slide. They all rely upon the ancient principle of direct proportionality. Historical mouthpiece designs for instruments like French horn, trombone, tuba, and similar instruments seem less adventuresome than the designs discussed here for cornet or trumpet.

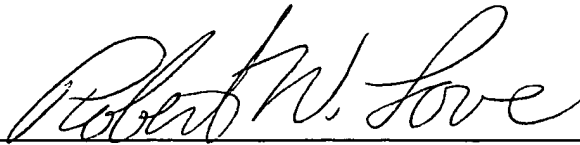
LATER TRENDS IN MOUTHPIECE DESIGN

19. A printout from an internet website of David. G Monette in December, 2003 shows all of the B-flat pitch mouthpiece models produced over several years. They all have the same Vincent Bach-style length. For trumpet in different keys of pitch (and different length), Monette makes mouthpieces of shorter lengths for correspondingly shorter Trumpets in higher Keys like C, D, E-flat and Piccolo B-flat. The applicant is unable to find photographs of these shorter mouthpieces, but he has viewed these mouthpieces at conventions for brass wind players.
20. **The Brasswind Catalog of Fall/Winter 2003 lists products from about 34 different companies that supply mouthpieces for all brass instruments. Length is not mentioned for any model since length is assumed to be standardized.** Mentions of shank SIZE refers to the fit of a mouthpiece for different types of trombones. Detailed charts do compare cup diameters, since musicians consider this the most important dimension of merit. See pages 64 to 72. Most manufacturers are represented here. Some images appear severely distorted.
21. In about year 2001 Bob Reeves Mouthpieces Company introduced trumpet versions (C2J) of the so-called "short shank" cornet mouthpieces. The effect is similar to using a cornet mouthpiece on a trumpet by using a common "trumpet to cornet shank extender". Reeves uses the same ancient principle of direct proportions with fixed-lengths of about 6.5 cm to balance different cup sizes. Mouthpiece designers Mark Curry and John Stork make similar fixed-length mouthpieces.
22. Recent website reprint. Respected designer, Gary Radtke of GR Mouthpieces, apparently believes that mouthpieces should not deviate much from the length standards of Vincent Bach. In discussing trumpet mouthpieces Radtke states "I usually don't make a mouthpiece less than 3.4 inches (8.63cm). Shorting a mouthpiece can have many effects good and bad, using physics these effects usually cancel each other out". Radtke never states "the physics" upon which he makes claims. About shorter lengths he says "It would destroy a GR mouthpiece." When changing from a small cup size to a large cup size, GR mouthpieces require a change of tuning slide position just like other conventional mouthpieces. Radtke claims to use a "wave theory" and calculations of internal volume to design his mouthpieces, but examination of GR products indicates a reliance upon ancient principles of direct proportionality as described the text of the patent application.
23. Recent website reprint. GR Mouthpieces shows standard length "blanks" from which various products are produced. They appear to have standard Vincent Bach lengths.
24. Recent website reprint. Here GR Mouthpieces depicts their backbore shapes. The image and descriptions indicate a traditional approach to backbore design.

SUMMARY: None of the related citations show interest in systematic variations of mouthpiece length for any brass wind instrument. Even where companies present two different lengths of mouthpieces for a single type of instrument (cornet and trumpet), the lengths are treated separately as unrelated. Furthermore, there are no other intermediate lengths that might be suggestive of a concept for a set of mutli-length mouthpieces. A complete search of all related U.S. utility and design patents was made in addition to product research.

Very Respectfully,

Applicant



Robert W. Love

Enclosures: PTO SB/08(A&B) and References

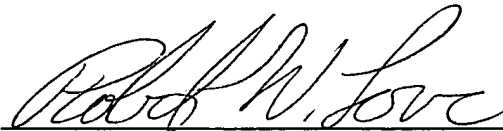
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet

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Complete if Known

Application Number	10/730605
Filing Date	12-08-2003
First Named Inventor	Robert W. Love
Art Unit	
Examiner Name	
Attorney Docket Number	

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
	1	US- 1,012,140	03-13-1911	August Kunze	Pg 1, Col. 1, lines 9 to 24
	2	US- 1,178,513	04-11-1916	Charles E. George	Pg 1, Col. 1, lines 39 to 42
	3	US- 2,273,177	04-04-1940	Domenick Calicchio	Fig 1 to 7, Title
	4	US- 2,758,497	12-23-1954	Walter J. Sarad	Fig 1 to 6, lines 23 to 28
	5	US- 2,917,964	08-06-1959	Alfred S. Cassinelli	Pg. 1, Col. 1, line 33 to 37, Fig 2
	6	US- 3,808,935	05-07-1974	Robert Sims Reeves	Abstract, Fig 2
	7	US- 4,395,933	08-02-1983	Joseph J. Shepley	Fig 1, Fig 3
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)				Complete if Known	
				Application Number	10/730605
				Filing Date	12/08/2003
				First Named Inventor	Robert W. Love
				Art Unit	
				Examiner Name	
Sheet	1	of	2	Attorney Docket Number	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	8	Lyons and Healy Co., Band Instruments, Uniforms, and Trimmings catalog 1883-1884 edition, page 93, USA	
	9	Sears Roebuck & Co., catalog, 1897, page 537, "Band Instrument Mouthpieces", USA	
	10	C. G. Conn, product catalog, circa 1908, "C.G. CONN'S NEW INVENTION Mouthpieces", USA	
	11	J.W. JENKIN'S SONS MUSIC CO., catalog, circa 1910, USA "THE YORK PERFECTED MOUTHPIECES" page 90 (upper 2/3 of page)	
	12a	J.W. JENKINS SONS MUSIC CO., catalog, circa 1930, USA "BAND INSTRUMENT FURNISHINGS", "The Celebrated "Vincent Bach Mouthpieces"	
	12b	CZECHOSLOVAK MUSIC CO., NEW YORK, catalog, circa 1932, USA "Genuine BACH Mouthpieces"	
	12c	CONTINENTAL MUSIC COMPANY, catalog, circa 1932-1933, page 48, USA "Bach Mouthpieces"	
	13	H.N. WHITE CO., catalog, September 1936, USA "New KING Modern Type Mouthpieces" (lower right corner)	
	14	VINCENT BACH, Embouchure and Mouthpiece Manual, 1956, USA, pages 20-22, "OUTER DIMENSIONS OF BACH MOUTHPIECES"	
	15	ROBERT W. LOVE photograph of early, pre-invention experimental proptotypes, 02/01/2004	

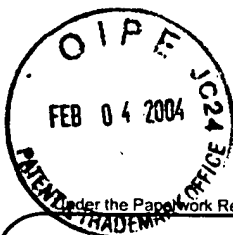
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¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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	16	YAMAHA CORPORATION, catalog WA-9R, circa 1998, "printed in Japan" "Why Not TRY the BEST", "YAMAHA MOUTHPIECES for Brass Instruments"		
	17	Boosey & Hawkes Group, DENNIS WICK Mouthpieces & Mutes, catalog, circa 2001, inset comparison chart from page 7 for Cornet mouthpieces		
	18	VINCENT BACH, Mouthpiece Manual, circa 2003, page 32, USA "Outer Dimensions of Bach Mouthpieces"		
	19	David G. Monette Corporation, webpage, "MONETTE CONCEPTS", USA, printed 12/9/03, pg 1 & 2, "The Development of Monette Trumpet Mouthpieces"		
	20	The Brasswind Catalog, Fall/Winter 2003, pages 64 to 72, , USA "Mouthpieces" (The Brasswind & Woodwind Corp., South Bend, Indiana)		
	21	BOB REEVES Company Advertisement, in "Journal of the International Trumpet Guild", Spring, 2003, USA, "If you <i>only</i> want a trumpet mouthpiece..."		
	22	GRMOUTHPIECES.COM, website article, "C Trumpet Mouthpiece", page 2 of 2, by Gary Radtke, printed 12/12/2003 USA		
	23	GRMOUTHPIECES.COM, website article, "GR Trumpet Mouthpieces", page 1 of 2, by Gary Radtke, printed 1/29/04 USA		
	24	GRMOUTHPIECES.COM, website article, "GR Mouthpiece Backbores", page 1 of 1, by Gary Radtke, printed 1/29/04 USA		

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